SEQUENCE LISTING

```
<110> Sakowicz, Roman
       Goldstein, Lawrence
<120> Identification and Expression of Novel Kinesin Motor Protein
<130> UCSD-04871
<140> 09/724,586
<141> 2000-11-28
<160>
<170> PatentIn version 3.2
<210>
       784
<211>
<212> PRT
<213> Thermomyces lanuginosus
<220>
<221> MISC FEATURE
<223> TL-gamma ATP-dependent plus end-directed microtubule motor
       protein
<220>
<221> DOMAIN
        (1)..(357)
<222> (1)..(357)
<223> kinesin-like microtubule motor domain
<220>
<221> DOMAIN
<222> (358)..(442)
<223> neck domain links motor domain to stalk domain
<220>
<221> DOMAIN
<222> (602)..(784)
<223> tail domain
 <400> 1
Met Ser Gly Gly Asn Ile Lys Val Val Arg Val Arg Pro Phe
Asn Ala Arg Glu Ile Asp Arg Gly Ala Lys Cys Ile Val Arg Met Glu
 Gly Asn Gln Thr Ile Leu Thr Pro Pro Pro Gly Ala Glu Glu Lys Ala
 Arg Lys Ser Gly Lys Thr Ile Met Asp Gly Pro Lys Ale Phe Ala Phe
```

	*		,	
11/12/200	3 12	:33 FA	X	

Asp 65	Arg	Ser	Tyr	Trp	Ser 70	Phe	qeA	Lys	Asn	Ala 75	Pro	Aen	Tyr	Ala	Arg 80
Gln	Glu	Авр	Leu	Phe 85	Gln	Asp	Leu	фlу	Val 90	Pro	Leu	Leu	Двф	Asn 95	Ala
Phe	Lys	Gly	Tyr 100	Asn	Asn	Сув	Ile	Phe 105	Ala	Туг	GJA	Gln	Thr 110	Gly	Ser
Gly	ГЛЭ	Ser 115	Tyr	Ser	Met	Met	Gly 120	Tyr	Gly	Ъув	Glu	His 125	Gly	Val	Ile
PIO	Arg	Ile	Сув	Gln	Двр	Met 135	Phe	Arg	Arg	lle	Asn 140	Glu	Leu	Gln	Lys
Asp 145	råe	Asn	Leu	Ţhr	Сув 150	Thr	Val	Glu	Val	Ser 155	Tyr	Leu	Glu	Ile	Tyr 160
Asn	Glu	Arg	Val	Arg 165	Asp	Leu	Leu	Asn	Pro 170	Ser	Thr	Lys	Gly	Asp 175	Leu
Lys	Val	Arg	Glu 180		Pro	Ser	Thr	Gly 185	Pro	Tyr	Val	Glu	Asp 190	Leu	Ala
Lys	Leu	Val 195		Arg	Sex	Phe	Gln 200	Glu	Ile	Glu	Asn	Leu 205	Met	Asp	Glu
Gly	Asn 210		. Ala	. Arg	Thr	Val 215		Ala	Thr	Asp	Met 220	Asn	Glu	Thr	sex
Ser 225		se:	His	Ala	Val 230		Thr	Leu	Thr	Leu 235	Thr	Gln	Lys	Trp	His 240
Asp	Glu	ı Glı	1 Thr	Lys 245		Aeg	Thr	Glu	. Lye 250		. Ala	Lys	Ile	Ser 255	Leu
val	Ası) Lei	ı Ala 260		, Ser	Glı	ı Arg	Ala 265	Thr	; Şer	Thr	: Gly	7 Ala 270	Thr	gly
Ala	Arg	275 275		Glu	ı Gly	Ala	a Glu		Asr	a Azg	sez	1eu 289	ı Sei	Thi	Leu
G1 I	Arg 290		l Ile	a Ala	a Ala	Le:		Авр) Met	: Sei	300		, Lye	Glr	. Lys
Lya 305		n Gl	n Lev	ı Vai	1 Pro 310		r Arg	J Asi	Sei	7 Val	L Let	t Thi	TE	Let	1 Leu 320

Lys Asp Ser Leu Gly Gly Asn Ser Met Thr Ala Met Ile Ala Ala Ile 325 330 335

Ser Pro Ala Asp Ile Asn Phe Glu Glu Thr Leu Ser Thr Leu Arg Tyr 340 345

Ala Asp Ser Ala Lys Arg Ile Lys Asn Eis Ala Val Val Asn Glu Asp 355 360 365

Pro Asn Ala Arg Met Ile Arg Glu Leu Lys Glu Glu Leu Ala Gln Leu 370 375 380

Arg Ser Lys Leu Gln Ser Ser Gly Gly Gly Gly Gly Gly Ala Gly Gly 395

Ser Gly Gly Pro Val Glu Glu Ser Tyr Pro Pro Asp Thr Pro Leu Glu 405

Lys Gln Ile Val Ser Ile Gln Gln Pro Asp Ala Thr Val Lys Lys Met 420 425

Ser Lys Ala Glu Ile Val Glu Gln Leu Asn Gln Ser Glu Lys Leu Tyr 435

Arg Leu Asn Gln Thr Trp Glu Glu Lys Leu Ala Lys Thr Glu Glu 450

His Lys Glu Arg Glu Ala Ala Leu Glu Glu Leu Gly Ile Ser Ile 465 470 475

Glu Lys Gly Phe Val Gly Pro Tyr His Ser Lys Glu Met Pro His Leu 485 490 495

Val Asn Leu Ser Asp Asp Pro Leu Leu Ala Glu Cys Leu Val Tyr Asn 500 510

He Lys Pro Gly Gln Thr Arg Val Gly Asn Val Asn Gln Asp Thr Gln 525

Ala Glu Ile Arg Leu Asn Gly Ser Lys Ile Leu Lys Glu His Cys Thr | 530 535 540

Phe Glu Asn Val Asp Asn Val Val Thr Tie Val Pro Asn Glu Lys Ala 545 550 550 Ala Val Met Val Asn Gly Val Arg Ile Asp Lys Pro Thr Arg Leu Arg 575 Gly Tyr Arg Ile Ile Leu Gly Asp Phe His Ile Phe Arg Phe Asn Pro Glu Glu Ala Arg Ala Glu Arg Gln Glu Gln Ser Leu Leu Arg Ser Val Thr Asn Ser Gln Leu Gly Ser Pro Ala Pro Gly Arg His 610 620 Arg Thr Leu Ser Lys Ala Gly Ser Asp Ala Asp Gly Asp Ser Arg Ser Asp Ser Pro Leu Pro His Phe Arg Gly Lys Asp Ser Asp Trp Phe 645 655 Ala Arg Arg Glu Ala Ala Ser Ala Ile Leu Gly Leu Asp Gln Lys 660 670 Ser His Leu Thr Asp Asp Glu Leu Asp Ala Leu Phe Asp Asp Val Ile Gln Lys Ala Arg Ala Val Arg Arg Gly Leu Val Glu Asp Asn Glu Asp 690 695 700 Ser Asp Ser Gln Ser Ser Phe Pro Val Arg Asp Lys Tyr Met Ser Asn 705 710 720 Thr Ile Asp Asn Phe Ser Leu Asp Thr Ala Ile Thr Met Pro Gly 725 730 Thr Pro Arg Ser Asp Asp Asp Gly Asp Ala Leu Phe Fhe Gly Asp Lys Lys Ser Lys Gln Asp Ala Ser Asn Val Asp Val Glu Clu Leu Arg Gln 755 760 765 Gln Ala Gln Met Glu Glu Ala Leu Lys Thr Ala Lys Gln Glu Phe

1320

1380

1440

1500

i

21021 .

<210> | 2352 <211> <212> DNA Thermomyces lanuginosus <213> <220> misc_feature TL-gamma ATP-dependent plus end-directed microtubule motor <221> protein atgtcgggcg gtggaaatat caaggtggtg gtgcgggtac gcccgttcaa cgcccgagaa <400>: 2 60 ategaeegtg gegeaaaatg tattgtgegg atggaaggaa ateaaaceat eetcaeeect 120 ectecgggtg ecgaagagaa ggegegtaaa agtggeaaaa etattatgga tggeecgaag 180 geattracet tegateggte gtattggtee tttgacaaga atgeteecaa etatgegaga 240 caggaagacc tattocaaga totoggagto cogottotog ataatgoatt caagggttat 300 aacaattgta tettegoeta eggteagace ggttegggea agteetatte aatgatggge 360 tatggcaagg agcatggcgt gatcccgcgg atttgccagg acatgttccg gcgtattaat 420 gaactgcaga aggacaagaa ceteaettge accgtegaag tttegtaett ggaaatttae 480 aatgaacgag tgcgagactt gctgaatccg tcgacaaagg ggaatctcaa ggtccgagaa 540 600 caccogtoga coggococta ogtggaggac ttggogaago tggtogtgog atcattocaa gaaatcgaaa atctcatgga tgagggcaac aaagccagaa cggttgccgc cacaaacatg 660 aacgagacat ccagtcgatc ccacgoogto ttcactttga ccttgacgca aaagtggcat 720 gatgaagaga ccaaaatgga cacagagaag gtígegaaga teagtetggt agatttggeg 780 ggttctgage gagcaacgtc caccggaget actggagege gactgaagga gggtgcagag **B40** atcaaccyct cactttogac cetagytoyt ytyattycay cyctagogya tatytoytoy 900 ggaaaacaga agaagaatca gttagtacct taccgagatt cggtactgac gtggcttctg 960 aaggacteet tgggaggeaa etegatgace gecatgattg eegecattte geetgetgat 1020 attaactttg aagagactet cagtaccett cgatatgcgg actetgcgaa gcgaatcaag 1080 aaccacycay tyytcaatya ayacccyaac ycycygatya teeycyaytt yaayyayyaa 1140 1200 ctcgcgcagc tgaggagcaa actccagagc agtggtggag gtggaggtgg tgcaggaggt. tetggeggge cagtggagga ategtaceeg eeegaeaege egetegagaa gcaaategtg 1260

togattoago agooggatgo gacagtoaag aaaatgagoa aggoagaaat ogtggagoaa

ctgaaccaga gtgagaagct ctatcgggat ctcaatcaga cctgggaaga gaagctggcc

aagaoogagg aaatccacaa ggaacgagaa gcggcgctcg aggagctggg tatcagcatc

gaaaaggget ttgttggece ttaccactee aaagaaatge cacatetagt caaettgage

1

11/12/2003 12:34 FAX

11/12/2003 10:11 FAX 415 904 6511

→ San Francisc

gatgatecte ttetggetga gtgtettgte tacaacatea ageeegggea gacaagggtt 1560 ggaaacgtca accaagatac acaagcggaa attcgtctga acggttogaa gatcctgaaa 1620 gaacactgta ogtttgaaaa tgtggacaao gttgtgacoa togtgccaaa cgagaaggct 1680 getgtcatgg tgaacggogt gegaategae aageetaete geeteegeag eggetacagg 1740 atoateetgg gegattteea'eatttttega tteaaceate eggaagaage tegtgeggaa 1800 CggCaagaac aatcottget tegecattet gtcaccaaca gtcagttggg ttcgcctgct 1860 ccaggccgtc acgaccggac actgagcaag gcgggttcgg atgcggacgg cgattctcgc 1920 1980 teagattete etttgeegea etttegtgga aaggatagog aetggttota tgetegeagg gaagetgeta gegogateot agggttggat cagaagatet oteatetgae agatgaegag 2040 ttggatgcat tatttgaoga tgttcagaaa gogcgggcag ttcgtcgtgg gctggtcgaa 2100 2160 gacaacgaag atagegatte geagagtteg titleeggtee gigacaaata caigiceaal ggaaccattg ataatttctc gctcgatacc gccattacta tgccgggtac ccctcgtagt 2220 gatgacgacg gtgacgcgct gttttttggt gataagaagt cgaaacagga tgcgtctaat 2280 gttgatgttg aggagttgeg teaacagcag getcagatgg aagaagccct gaaaacageg 2340 aagcaggaat to 2352 <210> <2115 21 <212> DNA <213> Artificial Sequence · <220> Synthetic <223> <400> 3 21 atgtcgggcg gtggaaatat c <210> <211> 23 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 4 gaattootgo ttegetgttt 'tea 23 <210> 5 30 <211> <212> DNA Artificial Sequence <213> <220> <223> Synthetic

11/12/2003 10:11 FAX 415 904 6511

```
<220>
<221> misc_feature
       (25)^{-}.(25)
<222>
<223> n is a, c, g, or t
<400> 5
                                                                                 30
gcgcggatcc atyttygcht ayggncarac
<210>
        6
       30
<211>
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic
<220>
<221> misc_feature <222> (16)..(16)
<223> n is a, c, g, or t
<220>
<221> misc_feature <222> (28)..(28)
<223> n is a, c, g, or t
gcgcgaattc tcdganccdg cvarrtcnac
                                                                                 30
<210>
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic
<220>
<221> misc_feature
<222> (16)..(16)
<223> n is a, c, g, or t
<220>
<221> misc_feature
<222>
       (28)...(28)
<223> n is a, c, g, or t
<400> 7
gegegaatte tedetneedg evarrtenae
                                                                                 30
```

→ San Francisc

2024

<210> 8 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> | Synthetic <400> | 8 gatatttcoa cegccgaca:t <210><211><212> 23 DNA <213> Artificial Sequence <220> <223> Synthetic <400> 9 tgaaacagc gaagcaggaa tte

23

21